TCP/IP Services for DECnet Applications

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This document describes how to configure TCP/IP Services for DECnet Applications (DECnet application services, formerly known as Phase/IP).

Revision/Update: This guide replaces the *TCP/IP Services for DECnet Applications*, V4.2

Operating System/Version: VAX/VMS V5.5-2 or later, OpenVMS VAX V6.0 or later, or OpenVMS Alpha V6.1 or later

Software Version: MultiNet V4.3

Process Software
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Contents

Preface

TCP/IP Services for DECnet Applications (*DECnet application services*, formerly known as Phase/IP) lets applications designed to execute over DECnet®[1] to execute over TCP/IP instead.

DECnet application services require Process Software MultiNet for OpenVMS V4.0 or later, and VAX/VMS V5.0 or later, OpenVMS VAX V6.0 or later, or OpenVMS Alpha V1.5 or later. Process Software recommends OpenVMS/VAX V6.1 or later, or OpenVMS Alpha V1.5 or later because OpenVMS support for longer node names provides the ability to address full TCP/IP domain names directly (for example, DIRECTORY HOLMES.FLOWERS.COM::).

When *DECnet application services* are used with earlier versions of VMS, the network administrator may need to configure a mapping table to make sure all nodes can be addressed under the six-character DECnet name limitation. Information about mapping tables is presented in Chapter 2.

This guide is written for network administrators who create and maintain networks and VMScluster environments. It is assumed you have already configured Process Software MultiNet for OpenVMS and have established TCP/IP connectivity between hosts.

This guide is organized as follows:

- **Introduction**—Chapter 1 introduces DECnet application services and lists the differences between DECnet and DECnet application services.
- **Configuration**—Chapter 2 explains how to configure DECnet application services.
- **NOT-CONFIG Commands**—Appendix A describes the MULTINET CONFIGURE /NOT utility.

1. All references in this book to DECnet apply to both DECnet Phase IV and DECnet/OSI (also called DECnet)

Typographical Conventions

Examples in this guide use the following conventions:

Convention	Example	Meaning
Bold text	**YES**	Represents user input in instructions or examples.
Bold, uppercase Courier text	**RETURN**	Represents a key on your keyboard.
Bold Courier text with a slash	**Ctrl/A**	Indicates that you holddown the key labeled **Control** or **Ctrl** while simultaneously pressing another key; in this example, the "A" key.
A vertical bar within braces	{ ON | OFF }	Indicates a list of values permitted in commands. The vertical bar separates alternatives; do not type the vertical bar in the actual command.
Italicized text	*file_name*	Represents a variable or placeholder; introduces new terminology or concepts; emphasizes something important; represents the title of a book or publication.
Square brackets	[FULL]	Indicates optional choices; you can enter none of the choices, or as many as you like. When shown as part of an example, square brackets are actual characters you should type.
Underscore or hyphen	*file_name* or *file- name*	Between words in commands, indicates the item is a single element.

Obtaining Customer Support

Process Software provides customer support if you have a current Maintenance Service Agreement. If you obtained MultiNet from an authorized distributor or partner, you receive your customer support directly from them.

You can contact Customer Support by:

- Sending electronic mail (see the section Sending Electronic Mail).
- Calling the Customer Support Specialist (see the section Calling Customer Support).
- Fax a description of your problem to the Customer Support Group (see the section Contacting Customer Support by Fax).

Before Contacting Customer Support

Before you call, or send e-mail or a fax, please:

1. Verify that your Maintenance Service Agreement is current.
2. Read the Release Notes in SYS$HELP:MULTINET*nnn*. RELEASE_NOTES (*nnn*) is the current MultiNet software version installed on your system.
3. Have the following information available:
   - Your name
   - Your company name
   - Your e-mail address
   - Your voice and fax telephone numbers
   - Your Maintenance Agreement Number
   - OpenVMS architecture
   - OpenVMS version
   - MultiNet layered products and versions
4. Have complete information about your configuration, error messages that appeared, and problem specifics.
5. Be prepared to let an engineer connect to your system either with TELNET or by dialing in using a modem. Be prepared to give the engineer access to a privileged account to diagnose your problem.

You can obtain information about your OpenVMS architecture, OpenVMS version, MultiNet version, and layered products with the MULTINET SHOW /LICENSE command. For example:

```
$ MULTINET SHOW /LICENSE

Process Software MultiNet V4.3, VAXstation 4000-90, OpenVMS VAX V7.1
```

In this example:

- The machine or system architecture is VAX.
- The OpenVMS version is V7.1.
- The MultiNet version is V4.3.

You can use the following table as a template to record the relevant information about your system.

System Information Required Information	**System Information Required Information**
Your name	
Company name	
Your e-mail address	
Your voice and fax telephone numbers	

System Information Required Information	System Information Required Information (Continued)
System architecture	VAX | Alpha
OpenVMS Version	
MultiNet optional software components:	
- MultiNet NFS Client	Installed? Yes | No
- MultiNet NFS Server	Installed? Yes | No
- MultiNet Secure/IP Client	Installed? Yes | No
- MultiNet Secure/IP Server	Installed? Yes | No
- TCP/IP applications	Installed? Yes | No
- Online documentation	Installed? Yes | No
-MultiNet Programmer's Kit	Installed? Yes | No

Sending Electronic Mail

For many questions, electronic mail is the preferred communication method. Customer support via electronic mail is available to customers with a current support. At the beginning of your mail message, include the information listed in the section *Before Contacting Customer Support*. Continue with the description of your situation and problem specifics. Include all relevant information to help your Customer Support Specialist process and track your electronic support request. Send electronic mail to **support@process.com**

Electronic mail is answered Monday through Thursday from 8:30 a.m. to 7:00 p.m., and on Friday from 8:30 a.m. to 5:00 p.m. United States Eastern Time.

Calling Customer Support

For regular support issues, call 800-394-8700 or 508-628-5074 for support Monday through Thursday from 8:30 a.m. to 7:00 p.m., and on Friday from 8:30 a.m. to 5:00 p.m. United States Eastern Time.

For our customers in North America with *critical* problems, an option for support 7 days per week, 24 hours per day is available at an additional charge. Please contact your account representative for further details.

Before calling, have available the information described in *Before Contacting Customer Support*. When you call, you will be connected to a Customer Support Specialist.

Be prepared to discuss problem specifics with your Customer Support Specialist and to let that person connect to your system.

If a Specialist is not immediately available, your call will be returned as soon as possible.

Contacting Customer Support by Fax

You can send fax transmissions directly to Customer Support at 508-879-0042.

Before faxing comments or questions, complete the steps in Before Contacting Customer Support and include all your system information at the beginning of your fax message. Continue with the description of your situation and problem specifics. Include all relevant information to help your Customer Support Specialist process and track your fax support request.

Faxed questions are answered Monday through Thursday from 8:30 a.m. to 7:00 p.m., and on Friday from 8:30 a.m. to 5:00 p.m. United States Eastern Time.

Obtaining Online Help

Extensive information about MultiNet is provided in the MultiNet help library. For more information, use the following command:

```
$ HELP MULTINET
```

MultiNet Frequently Asked Questions List

You can obtain an updated list of frequently asked questions (FAQs) and answers about MultiNet products from the Process Software home page located at http://www.process.com.

Accessing the MultiNet Public Mailing List

Process Software maintains two public mailing lists for MultiNet customers:

- **Info-MultiNet@process.com**
- **MultiNet-Announce@process.com**

The **Info-MultiNet@process.com** mailing list is a forum for discussion among MultiNet system managers and programmers. Questions and problems regarding MultiNet can be posted for a response by any of the subscribers. To subscribe to Info-MultiNet, send a mail message with the word “SUBSCRIBE” in the body to Info-MultiNet-request@process.com. The information exchanged over Info-MultiNet is also available via the USENET newsgroup vmsnet.networks.tcp-ip.multinet.

You can retrieve the Info-MultiNet archives by anonymous FTP to ftp.multinet.process.com. The archives are located in the directory [CUSTOMER_SUPPORT.MAIL_ARCHIVES.INFO-MULTINET].

You can also find the Info-MultiNet archives on the MultiNet consolidated CD-ROM in the [CONTRIBUTED-SOFTWARE.LIST-ARCHIVES.INFO-MULTINET] directory.

The **MultiNet-Announce@process.com** mailing list is a one-way communication (from Process Software to you) used for the posting of announcements relating to MultiNet (patch releases, product releases, etc.). To subscribe to MultiNet-Announce, send a mail message with the word “SUBSCRIBE” in the body to MultiNet-Announce-request@process.com.

Process Software World Wide Web Server

Electronic support is provided through the Process Software World Wide Web server, which you can access with any World Wide Web browser; the URL is **http://www.process.com** (select **Customer Support**).

Obtaining Software Patches Over the Internet

Process Software provides software patches in save set and ZIP format on its anonymous FTP server, ftp.multinet.process.com. For the location of software patches, read the .WELCOME file in the top-level anonymous directory. This file refers you to the directories containing software patches.

To retrieve a software patch, enter the following commands:

```
$ MULTINET FTP /USERNAME=ANONYMOUS/PASSWORD="-
emailaddress" FTP.MULTINET.PROCESS.COM
```

A message welcoming you to the Process Software FTP directory appears next followed by the FTP prompt. Enter the following at the prompts:

```
FTP.MULTINET.PROCESS.COM>CD [CUSTOMER_SUPPORT.SOFTWARE_UPDATES_VMS.Vnn]
FTP.MULTINET.PROCESS.COM>GET update_filename
```

- *emailaddress* is your e-mail address in the standard *user@host* format.
- *nn* is the version of MultiNet you want to transfer.
- *update_filename* is the name of the file you want to transfer.

To transfer files from Process Software directly to an OpenVMS system, you can use the GET command without any other FTP commands. However, if you need to transfer a software patch through an intermediate non-OpenVMS system, use BINARY mode to transfer the files to and from that system.

In addition, if you are fetching the software patch in save set format, make sure the save set record size is 2048 bytes when you transfer the file from the intermediate system to your OpenVMS system:

- If you use the GET command to download the file from the intermediate system, use the FTP RECORD-SIZE 2048 command before transferring the file.
- If you use the PUT command to upload the file to your OpenVMS system, log into the intermediate system and use the FTP quote site rms recsize 2048 command before transferring the file.

Process Software also supplies UNZIP utilities for OpenVMS VAX and Alpha for decompressing ZIP archives in the [THIRD_PARTY_TOOLS.VMS] directory. To use ZIP format kits, you need a copy of the UNZIP utility. The following example shows how to use the UNZIP utility, assuming you have copied the appropriate version of UNZIP.EXE to your current default directory.

```
$ UNZIP := $SYS$DISK:[]UNZIP.EXE
$ UNZIP filename.ZIP
```

Use VMSINSTAL to upgrade your MultiNet system with the software patch.

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Your comments about the information in this guide can help us improve the documentation. If you have corrections or suggestions for improvement, please let us know.

Be as specific as possible about your comments: include the exact title of the document, version, date, and page references as appropriate.

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Process Software
959 Concord Street
Framingham, MA 01701-4682
Attention: Marketing Manager

You can also fax the form to us at 508-879-0042.

Your comments about our documentation are very much appreciated.

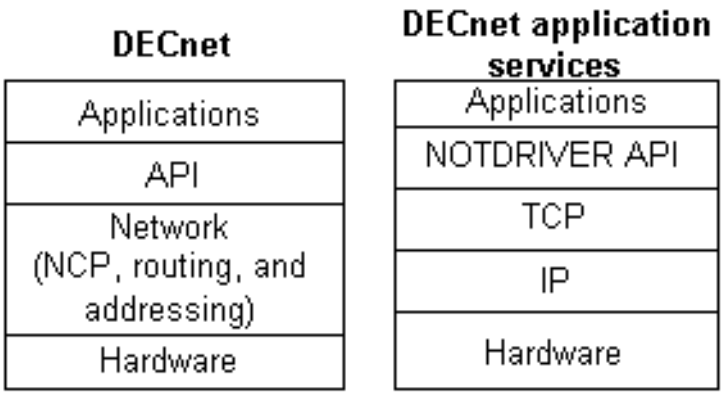
Chapter 1

Introduction

DECnet application services let applications designed to execute over DECnet to execute over TCP/IP instead. *DECnet application services* provide the same DECnet API (Application Programmer Interface) seamlessly across TCP without DECnet protocols or software, and without the additional overhead of running both protocol stacks.

DECnet application services interface with DECnet applications by loading the NOT driver (NETDRIVER-over-TCP) into the OpenVMS kernel. The NOT driver augments DECnet, or may be used to replace DECnet entirely. Figure 1-1 illustrates this relationship.

Figure 1-1 Relationship Between DECnet and DECnet Application Services



If DECnet is not running on your host, the NOT driver provides the NET0: device on your system. If DECnet is running on your system, the NOT driver interfaces into the DECnet NET0: device, and handles connection requests itself or passes those requests to DECnet based on the rules embedded in the *DECnet application services* code (described in Chapter 2).

Because *DECnet application services* provide the DECnet API, standard Compaq applications, such as SET HOST (CTERM), VMSmail, PHONE, and RMS file access (FAL), run unmodified across *DECnet application services*. Except for obsolete DECnet management functions like SHOW NETWORK and NCP, *DECnet application services* are indistinguishable from DECnet to

users and applications.

To preserve existing DECnet connectivity to hosts not running *DECnet application services*, DECnet and *DECnet application services* can run concurrently.

Databases

DECnet application services handle network access through a group of databases:

- Name-Mapping-Identifies the TCP/IP node name equivalent of a local DECnet node name
- Object-Identifies the services (objects) provided for incoming connections
- Proxy-Identifies the remote users who can access a local account without specifying a password

DECnet application services maintain these databases in a single file, MULTINET:NOT.CONFIGURATION. Use the MULTINET CONFIGURE /NOT utility to add, modify, and delete database entries, and customize *DECnet application services*.

DECnet Application Services Considerations

DECnet application services do not support:

- MOP (Maintenance Operations Protocol) loading of Ethernet LAVc nodes
- MOP loading of terminal servers. For terminal server MOP loading, most modern terminal servers support BOOTP or DHCP loading; use the MultiNet BOOTP or DHCP server.

In addition, MULTINET SHOW /LICENSE does *not* recognize the *DECnet application services* PAK (Product Authorization Key). List license information with the OpenVMS SHOW LICENSE command.

Note! *DECnet application services* communicate only to hosts that are also running *DECnet application services*. The nodes may run DECnet concurrently, but *DECnet application services* must be present. Because *DECnet application services* run only on VMS systems, any communication with non-VMS systems must occur over MultiNet.

Differences Between DECnet Application Services and DECnet

DECnet application services eliminate the administration requirements of DECnet and any resulting limitations, including the routing, hardware, and network size limitations, while imposing very minimal administration requirements of its own.

DNA and TCP/IP Protocols

DECnet application services replace most of DNA (Compaq Network Architecture) with the equivalent TCP/IP protocols. A DECnet "link" between an application and its server is mapped directly to a pair of TCP/IP connections, without the participation of the intervening DNA protocols.

Using the model presented in the Compaq Computer *DECnet for OpenVMS Networking Manual*, the DNA Session Control layer is replaced with the *DECnet application services* software; and the DNA Network Services Protocol (NSP), Routing Protocol, Data Link Protocols, and Physical

Links are replaced with the network connectivity provided by TCP/IP.

Many DECnet management tools and concepts do not have equivalents under *DECnet application services* (see Figure 1-1).

DECnet Networking Management

The DECnet network management utilities are not present under *DECnet application services* and have no equivalent. The basic network layer is provided by TCP/IP. Conversely, the DECnet application user functions available with DECnet, such as accessing remote files, remote command terminals (SET HOST), and task-to-task communications, are available under *DECnet application services* using the standard OpenVMS versions of these applications. These applications run unmodified over *DECnet application services.*

Using the NCP Utility

The NCP utility has no effect on the DECnet application services software. The NCP functionality performed by TCP/IP or *DECnet application services* includes:

The DEFINE NODE command used to equate DECnet host names to DECnet host addresses	There is no comparable DECnet host address under DECnet application services. Instead, DECnet host names are mapped to TCP/IP host names (see Chapter 2) that are mapped to IP addresses by DNS (described in Chapter 2) or host tables.
The DEFINE EXECUTOR TYPE {ROUTING | NONROUTING} command	There is no DECnet-style routing that occurs with *DECnet application services*; the routing layer of your network is provided by the TCP/IP routing protocols.
The NETCONFIG.COM utility	The NETCONFIG.COM utility is not used to configure your *DECnet application services* networking, and all restrictions associated with DECnet, such as geometry constraints, network size, and supported hardware, are removed and replaced with the more generous limitations of the TCP/IP networking protocols.
The NCP OBJECTS database	*DECnet application services* objects are controlled by the MULTINET CONFIGURE /NOT utility.

Using Proxies

Proxies, manipulated in the DECnet environment by the AUTHORIZE utility, are maintained by the MULTINET CONFIGURE /NOT utility. All logins handled by LOGINOUT in a DECnet environment are still handled by LOGINOUT in a *DECnet application services* environment.

Note! NETPROXY.DAT proxies cannot be readily used to generate commands in the MULTINET CONFIGURE /NOT utility. This is because *DECnet application services* proxies are based on the fully domain name associated with the IP address, not the DECnet name of the host.

User Interface

The user interface to the network is unchanged. The features described in the Compaq Computer DECnet for OpenVMS Networking Manual apply to *DECnet application services*, except for management functions like SHOW NETWORK which have no equivalent under *DECnet application services*.

There is no equivalent in the *DECnet application services* software for the DECnet adaptive routing layer because this functionality is provided by Process Software MultiNet for OpenVMS.

Chapter 2

Configuring DECnet Application Services

This chapter describes how to:

- Configure, start, and test DECnet application services
- Map DECnet names to TCP/IP fully qualified domain names

This guide describes how to configure *DECnet application services* with the NOT-CONFIG utility (MULTINET CONFIGURE /NOT). You can also perform these configuration tasks with the MENU-CONFIG utility (MULTINET CONFIGURE /MENU), which provides a menu-driven interface.

To access the MENU-CONFIG *DECnet application services* configuration screens, see the *Using MENU-CONFIG* section.

Configuring DECnet application services

After installing *DECnet application services*:

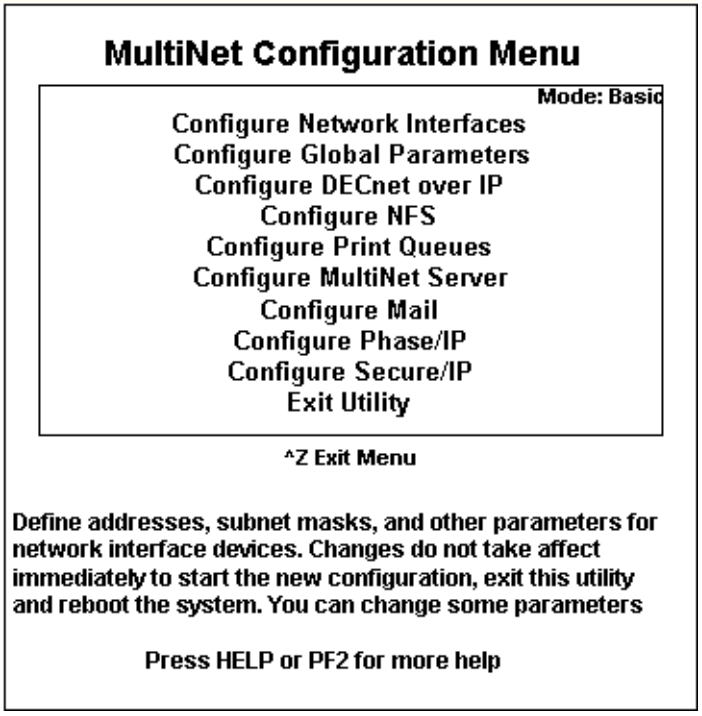
1	Use the MULTINET CONFIGURE /NOT utility to: **a** Set the DECNET-LOADED and PREFER-DECNET-TO-TCP global parameters as required using the SET command. **b** Configure proxies using the ADD PROXY command. **c** If needed, configure objects for local DECnet applications using the ADD OBJECT command. **d** If needed, define a user name and password for MAIL, PHONE, VPM, NML, and other objects you want to work over *DECnet application services* using the ADD OBJECT command. If you define a user name and password for an object, you may also want to set PROXY NONE on the object. **e** If needed, define name-mappings between DECnet node names and TCP/IP fully-qualified domain names, or name-mappings to force DECnet communication to specified nodes.
2	Add the startup of *DECnet application services* to your system startup, as shown in the *Modifying Your System Startup* section.

3	Reboot, or start the software without rebooting, as described in the *Starting DECnet Application Services without Rebooting* section.
4	If desired, test *DECnet application services*, as described in the *Testing DECnet Applications Services* section.

Using MENU-CONFIG

MENU-CONFIG provides access to all MultiNet configuration parameters via a character-based, menu-driven interface. For general information on MENU-CONFIG, see the *Administrator's Guide.*

To access the MENU-CONFIG *DECnet application services* screens, invoke MENU-CONFIG with the MULTINET CONFIGURE /MENU command, and choose "Configure DECnet Application Services.



When the *DECnet application services* Configuration screen appears, you can configure name-mappings, proxies, and objects, or modify the *DECnet application services* parameters by choosing the corresponding command from the menu. MENU-CONFIG provides context-sensitive help as you move the cursor between parameters.

Modifying Your System Startup

To start *DECnet application services* at system startup, modify the system startup file so that

DECnet application services start before MultiNet. If you are also running DECnet, ensure that DECnet application services start before DECnet. The setting of the DECNET-LOADED global parameter should agree with the lines placed in your system startup. If you change the setting of DECNET-LOADED, you must change your system startup.

If your system is running OpenVMS VAX V5.x, the system startup file is SYS$MANAGER:SYSTARTUP_V5.COM; for all later versions and for Alpha systems, this file is SYS$MANAGER:SYSTARTUP_VMS.COM.

If your system runs both DECnet and *DECnet application services*:

1	Modify your system startup file so it resembles the following example.
2	Set the global parameter DECNET-LOADED to TRUE (the default).

```
$ SYS$SYSDEVICE:[MULTINET.nodename.SYSCOMMON.MULTINET]-
_$ START_NOTDRIVER                    ! Start DECnet application service
$ @SYS$MANAGER:STARTNET               ! Start DECnet
$ SYS$SYSDEVICE:[MULTINET.nodename.SYSCOMMON.MULTINET]-
_$ START_MULTINET                     ! Start MultiNet
```

If your system runs only *DECnet application services*:

1	Modify your system startup file so it resembles the following example.
2	Remove the reference to @SYS$MANAGER:STARTNET.
3	Set DECNET-LOADED to FALSE (refer to Appendix A for a summary of commands).

```
$ SYS$SYSDEVICE:[MULTINET.nodename.SYSCOMMON.MULTINET]-
_$ START_NOTDRIVER                   ! Start DECnet application services
$ SYS$SYSDEVICE:[MULTINET.nodename.SYSCOMMON.MULTINET]-
_$ START_MULTINET                   ! Start MultiNet
```

Starting DECnet Application Services without Rebooting

Enable the NOT service, restart the MultiNet Server, and manually start *DECnet application services* with these commands:

```
$ MULTINET CONFIGURE /SERVER
SERVER-CONFIG>ENABLE NOT
SERVER-CONFIG>RESTART
SERVER-CONFIG>EXIT
$ @MULTINET:START_NOTDRIVER
$ @MULTINET:START_SERVER
```

When *DECnet application services* start after DECnet, certain applications that register as DECnet

objects during their startup are not registered with *DECnet application services*. Until these applications are restarted, any attempt to access these objects over *DECnet application services* will result in a NOSUCHOBJ error. This includes the DECwindows and CTERM (SET HOST) objects. To guarantee that all objects register with both *DECnet application services* and DECnet, Process Software recommends you reboot after installing and testing *DECnet application services* and modifying your system startup command procedure.

Testing DECnet Application Services

Test the *DECnet application services* installation by using the SET HOST command to connect to your own node and then to a remote node:

- If your system is running OpenVMS V6.1 or later or OpenVMS Alpha V1.5 or later, log into your own node with the SET HOST command as follows:

```
$ SET HOST *0
```

An asterisk preceding a host name forces processing by *DECnet application services*. If this command succeeds, also try:

```
$ SET HOST *remote_node_name
```

- If your system is running an earlier version of OpenVMS, use MULTINET CONFIGURE /NOT to define a NAME-MAPPING to force communication with a test host (for example, SPAM) to use *DECnet application services* rather than DECnet, SET HOST to test the installation as shown in the following example:

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>ADD NAME-MAPPING SPAM LOCALHOST
NOT-CONFIG>RELOAD
Connected to NETCONTROL server on "127.0.0.1"
< domain Network Control Mon 13-Mar-2000 7:42am-EST
< NOT database reload done
NOT-CONFIG>EXIT
$ SET HOST SPAM
```

If the SET HOST commands succeed, *DECnet application services* are working properly and you can remove the test NAME-MAPPING.

Resolving Node Names

Systems running both DECnet and *DECnet application services* use the following rules when

determining whether to use DECnet or *DECnet application services*:

1	If an asterisk precedes the node name (**nodename*), use *DECnet application services*. (Valid only if the system is running OpenVMS/VAX V6.1 or later, or OpenVMS/Alpha V1.5 or later.)
2	If an underscore precedes the node name (*_nodename*), use DECnet.
3	If name-mapping is configured for the node and the node is a valid TCP/IP node, use *DECnet application services*; a host is valid to TCP/IP if it appears in a host table or in DNS.
4	If the node name is a valid TCP/IP node or a numerical IP address, and not a valid DECnet node, use *DECnet application services*.
5	If the node name is a valid DECnet node and not a valid TCP/IP node, use DECnet.
6	If the node name is valid in both TCP/IP and DECnet, or if you specify the node name as "0," dispatch according to the setting of the global parameter PREFER-DECNET-TO-TCP, which is TRUE by default.

Name Mapping

With *DECnet application services* and TCP/IP, two translations must occur:

1	The DECnet name must be translated into a fully qualified domain name (a requirement of *DECnet application services*).
2	The fully qualified domain name must be mapped to an IP address (a requirement of TCP/IP).

By default, the local domain name is appended to the node name to create a fully qualified domain name.

By default, the PREFER-DECNET-TO-TCP setting is set to TRUE, so if the target node is a DECnet node and a TCP/IP node, the connection occurs over DECnet. Setting this parameter to TRUE ensures the connection occurs over DECnet if the target node is both a DECnet node and a TCP/IP node.

To force the connection over *DECnet application services* instead of DECnet, complete one of the following steps:

- Use the NOT-CONFIG utility to set PREFER-DECNET-TO-TCP to FALSE (the default value is TRUE). Setting this parameter to FALSE causes all connections to be made over *DECnet application services* if no name-mapping exists.

  If all nodes are running *DECnet application services*, and if appending the local domain name to the node name always results in the proper, fully qualified domain name for the host (which will occur for almost all networks), you have finished configuring *DECnet application services*.

If you set PREFER-DECNET-TO-TCP to FALSE, you can use ADD NAME-MAPPING to force connections to specific nodes to use DECnet. For more information on name mapping, see the *Create a Name-Mapping Database* section.

- On versions of OpenVMS that offer fullnames support, specify an asterisk before the node name (**nodename*). Use this method only for debugging.
- Map DECnet names to TCP/IP names using DNS.

You can map DECnet names to TCP/IP names in two ways:

Using DNS	To distinguish nodes running *DECnet application services* from those running only TCP/IP, use a separate subdomain similar to that in the DNAS.FLOWERS.COM examples shown in the *Using DNS* section. If desired, you can create similar configurations using host table aliases.
Using a name-mapping database	To distinguish nodes running *DECnet application services* from those running DECnet, use a name-mapping database as described in the *Creating a Name-Mapping Database* section. This method is very useful during the initial configuration of *DECnet application services*; however, the name-mapping database does not scale well in a large *DECnet application services* network. Process Software strongly recommends using DNS instead.

Using DNS

DNS maps node names to IP addresses and lets you store information in a central repository and create aliases (called "CNAME" records) for host names. (For more information on configuring DNS, refer to the *Administrator's Guide*.) By including information for *DECnet application services* nodes in DNS, you do not need to propagate configuration information to each node so it can translate six-character DECnet names to fully qualified TCP/IP names.

By creating CNAME records for hosts running *DECnet application services*, and putting the records in their own domain, like *node*.DNAS.FLOWERS.COM (where *node* is the six-character DECnet node name), you can easily differentiate between nodes that run *DECnet application services* and those that do not. When you create a *DECnet application services*, use the SET DOMAIN-DEFAULT command to point to it. For example:

```
NOT-CONFIG>SET DOMAIN-DEFAULT DNAS.FLOWERS.COM
```

Example CNAME records are:

```
;
;  This is a list of hosts running DECnet application services
;
BIRD.DNAS.FLOWERS.COM.      IN    CNAME   Free-Bird.FLOWERS.COM.
CAD.DNAS.FLOWERS.COM.       IN    CNAME   CAD.FLOWERS.COM.
FOO1.DNAS.FLOWERS.COM.      IN    CNAME   Foo-bar.FARAWAY.EDU.
CODEZ.DNAS.FLOWERS.COM.     IN    CNAME   Code-Z.FLOWERS.COM.
```

```
FOO2.DNAS.FLOWERS.COM.      IN     CNAME    Foo-bar.CLOSEBY.EDU.
```

A disadvantage of DNS is that it is difficult to set up and manage. However, the advantages of using DNS for *DECnet application services* name mappings are that DNS automatically propagates information to all systems that rely on it, and the mapping information is centrally maintained. If you do not already have DNS, and are not on the Internet, you must create a *fake root name server* before DNS can map *DECnet application services* node names to IP addresses. Contact Process Software Customer Support for information and assistance in setting up a fake root name server.

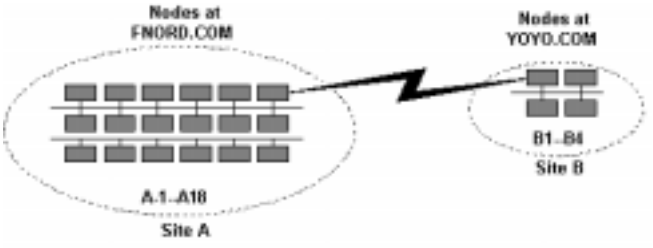
A similar configuration can be also be accomplished using host table aliases.

Creating a Name-Mapping Database

To create name-mapping entries that map each six-character DECnet node name to its corresponding TCP/IP node name:

1	Use the ADD NAME-MAPPING command in the NOT-CONFIG utility (MULTINET CONFIGURE /NOT) to add entries for each remote node that needs to communicate with your node.

2 When creating a name mapping, set the DOMAIN-DEFAULT global parameter to the domain with the anticipated greatest number of nodes and use name mapping to describe only the exceptions. For example, the following graphic shows two ways to handle name mapping:



In the **Recommended** solution, because Site A has the greatest number of nodes, set the DOMAIN-DEFAULT parameter to FNORD.COM at both sites. Using this solution, the exceptions to the network (that is, those nodes at Site B) are the only ones that need to be described in the name-mapping database.

The four host entries in the name-mapping database are:

```
B1    B1.FLOWERS.COM          B3    B3.FLOWERS.COM
B2    B2.FLOWERS.COM          B4    B4.FLOWERS.COM
```

If you specify a node name without a dot, the domain set by DOMAIN-DEFAULT is added to the end of the node name. Therefore, any node name at Site A (A1-A18) automatically maps to *node*.FNORD.COM.

In the **Not recommended** solution for Site B, the name-mapping database contains 18 nodes:

```
A1   A1.FNORD.COM        A7   A7.FNORD.COM        A13  A13.FNORD.COM
A2   A2.FNORD.COM        A8   A8.FNORD.COM        A14  A14.FNORD.COM
A3   A3.FNORD.COM        A9   A9.FNORD.COM        A15  A15.FNORD.COM
A4   A4.FNORD.COM        A10  A10.FNORD.COM       A16  A16.FNORD.COM
A5   A5.FNORD.COM        A11  A11.FNORD.COM       A17  A17.FNORD.COM
A6   A6.FNORD.COM        A12  A12.FNORD.COM       A18  A18.FNORD.COM
```

Because the local domain at Site B is FLOWERS.COM, nodes B1 through B4 will automatically map to node.FLOWERS.COM.

While the **Not recommended** method works, it requires more maintenance.

3 Propagate the database to each host running *DECnet application services.*

Note! It is important that you keep the databases up to date.

The more nodes in your network, the more difficult name-mappings are to manage, especially if nodes are managed by different people.

Appendix A

NOT-CONFIG Commands

This appendix describes the NOT-CONFIG commands.

Command Summary

The following table lists the commands you can run from the NOT-CONFIG prompt.

NOT-CONFIG Command	Description
ADD NAME-MAPPING	Adds or modifies a name-mapping entry.
ADD OBJECT	Adds or modifies an object entry.
ADD PROXY	Adds or modifies a proxy entry.
ATTACH	Detaches the terminal from the calling process and reattaches it to another process.
DELETE NAME	Deletes a name-mapping entry.
DELETE OBJECT	Deletes an object entry or its options.
DELETE PROXY	Deletes a proxy entry.
EXIT	Saves the current configuration (if it has been modified), and quits the configuration utility.
GET	Reads in a *DECnet application services* configuration file. (GET is the same as USE.)
HELP	Displays help information.
NETCONTROL	Changes the functionality of the executing *DECnet application services* image.
PUSH	Starts a DCL subprocess.

NOT-CONFIG Command	Description
QUIT	Quits the configuration utility. If the configuration file has been changed, QUIT asks if you want to save the file.
RELOAD	Reloads *DECnet application services* from the default configuration file.
SAVE	Writes out the current *DECnet application services* configuration file. (SAVE is the same as WRITE.)
SET	Sets NOT-CONFIG global parameters.
SHOW	Displays the current *DECnet application services* configuration.
SPAWN	Executes a single DCL command, or if entered without options, starts a subprocess with the same effect as PUSH.
STATUS	Displays the status of the *DECnet application services* configuration.
USE	Reads in a configuration file. (USE is the same as GET.)
VERSION	Displays the version and release information of the NOT-CONFIG configuration program.
WRITE	Writes out the current *DECnet application services* configuration to a file. (WRITE is the same as SAVE.)

ADD NAME-MAPPING

Adds or modifies a name-mapping entry. Modify existing entries with the ADD NAME-MAPPING command by entering new information at each prompt. The name-mapping database maps local DECnet node names to TCP/IP node name equivalents.

FORMAT

ADD NAME-MAPPING *[decnet-name] [tcp-name]*

PARAMETERS

decnet-name

Specifies the DECnet node name. If you omit the node name, you are prompted to supply it. The name can be a maximum of six characters.

tcp-name

Specifies the TCP/IP node name. If you omit the node name, you are prompted to supply it. Enter an underscore (_) in front of the node name (_nodename) to indicate that DECnet should be used instead of DECnet application services.

EXAMPLE

This example specifies that DECnet be used with the TIRED host, and that *DECnet application services* be used with the ZIPPY host.

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>ADD NAME-MAPPING
DECnet Nodename: TIRED
TCP Nodename: _
[Added mapping "TIRED" = "_"]
NOT-CONFIG>SHOW NAME-MAPPING
DECnet nodename   TCP nodename
---------------   ------------
TIRED             _
ZIPPY             ZIPPY.IRIS.COM
NOT-CONFIG>
```

ADD OBJECT

Adds or modifies an object entry. Modify existing entries with the ADD OBJECT command by entering new information at each prompt. Display information created with ADD OBJECT with the SHOW OBJECT /FULL command. Delete an object with the DELETE OBJECT command. The object database identifies the objects (services) provided for incoming connections.

FORMAT

ADD OBJECT *[entry] [NUMBER number] [FILE file]*
[FULLNAMES-SUPPORTED { TRUE | FALSE }]
[USER user] [PASSWORD password]
[PROXY { NONE | INCOMING }]

PARAMETERS

entry

Specifies an object name. If you omit the object name, you are prompted to supply it. The object name can be up to 16 characters in length.

NUMBER *number*

Specifies an object number in the range 0 to 255. If you omit the object number, it defaults to 0. You can use any many objects with number 0 as you wish; however, each number greater than 0 can only have one object associated with it. Compaq Computer reserves numbers 1 to 127 for its own objects. User-defined objects are typically numbered 0.

FILE *file*

Specifies a file name. If you omit the file name, no file name is used. For number 0 objects, the default file name is SYS$LOGIN:*object_name*.COM. Copies of the command file must exist in SYS$LOGIN for each person who might use the object.

Objects can execute an image accessible by all logins by storing the image in SYS$SYSTEM.

FULLNAMES-SUPPORTED

If specified, the object supports the OpenVMS fullnames feature. This feature delivers the fully qualified domain name of the client node to the server with the connection notification. The MAIL and FAL objects default this value to TRUE; all other objects default to FALSE. This allows MAIL to be answered even if you do not have appropriate name mappings configured. The fullnames feature is provided with OpenVMS VAX V6.1 and is a partial feature of OpenVMS Alpha V1.5 and later. On OpenVMS Alpha systems, enough fullnames support is provided for *DECnet application services* to accept fully qualified domain names; however, fullnames support is not supported by Compaq Computer for OpenVMS Alpha systems.

USER *username*

Specifies a user name associated with the object. When a process is created to service the object request on your system, OpenVMS uses this user name.

PASSWORD ***password***

Specifies a password associated with the object's user name.

PROXY

Set PROXY NONE to disable PROXY handling for only the specified object. When proxy handling is disabled, any connection to the object logs into the user name and password specified on the object with the ADD OBJECT *objectname*, USERNAME *username*, PASSWORD *password* command; or, in the absence of an object user name and password, to the default user name and password for the system. The default is PROXY INCOMING.

EXAMPLE

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>ADD OBJECT MAIL NUMBER 0 FILE SYS$SYSTEM:MAIL.EXE
NOT-CONFIG>ADD OBJECT MY_OBJECT
[Added object "MY_OBJECT" number 0]
NOT-CONFIG>SHOW OBJECT/FULL
Object Name Number Username     Password    FullNames Proxy    Filename
----------- ------ --------     --------    --------- -----    --------
DTR          63                              NO        INCOMING DTR
FAL          17                              YES       INCOMING FAL.EXE
MAIL         27                              YES       INCOMING MAIL_SER
VER.EXE
MY_OBJECT    0
NML          19                              NO        INCOMING NML.EXE
NOTES        33    NOTES$SERVER FNORDIES     NO        NONE     NOTES$SE
RVER.EXE
PHONE        29                              NO        INCOMING PHONE.EXE
VPM          51    MAIL$SERVER  FNORDIES     NO        NONE     VPM.EXE
NOT-CONFIG>
```

ADD PROXY

Adds or modifies a proxy entry. Modify existing entries with the ADD PROXY command by entering new information at each prompt.

FORMAT

ADD PROXY *[rmt_node::rmt_username local_username]*

PARAMETERS

rmt_node::rmt_username

Specifies a remote user name in the form *nodename::username*. The nodename can be any host name identifier; for example a six-character DECnet name or a fully qualified domain name. If you omit the user name, you are prompted to supply it.

local_username

Specifies the local user name. If you omit the user name, you are prompted to supply it. You cannot use special characters such as ampersand (&) in a user name. You can enter an asterisk (*) to indicate that the local user name is the same as the remote user name. You can add as many as 16 local user names to a single remote user name. Use the /DEFAULT qualifier to specify which one to use normally.

QUALIFIERS

/DEFAULT

Specifies that this is the default proxy.

DESCRIPTION

The proxy database identifies which remote users can access a local account without specifying a password. When you search for a node name in the proxy table, the following order is used to determine which nodes are permitted:

1	A fully qualified domain name has first priority (for example, WHATNO.FOO.BAR.COM::SYSTEM)
2	*.domain2.domain1.domain0:: (for example, *.FOO.BAR.COM::SYSTEM)
3	*.local.domain:: (for example, *.BAR.COM::SYSTEM)
4	*.domain:: (for example, *.COM::SYSTEM)
5	*:: (for example, *::SYSTEM)
6	Steps 1-5 again, with a wildcard to designate the remote user name

EXAMPLE

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>ADD PROXY
Remote User: FLOWERS::FNORDIST
Local User: FNORDIST
[Added proxy "FLOWERS::FNORDIST" = "FNORDIST"]
NOT-CONFIG>SHOW PROXY
Remote User            Local Users
--------------------   ------------
*.FOO.COM::*           *
FLOWERS::FNORDIST      FNORDIST
NOT-CONFIG>
```

ATTACH

Detaches the terminal from the calling process and reattaches it to another process. Use the SPAWN SHOW PROCESS /SUBPROCESSES command to list the names of subprocesses. Use the DCL LOGOUT command to return to the original process. If the MULTINET_DISABLE_SPAWN logical is set, ATTACH does not work.

FORMAT

ATTACH *process-name*

PARAMETERS

process_name

Specifies the name of a process to which you want your terminal attached. Not all subprocesses can be attached; some testing may be required.

EXAMPLE

This example creates and exits attached subprocesses. The SPAWN command creates a subprocess. Then MM is invoked from that subprocess. Next, the SPAWN SHOW PROCESS /SUBPROCESSES command lists all the active subprocesses: _TWA42: is NOT-CONFIG, PROC_1 is MM, and PROC_2 is the SPAWN SHOW PROCESS /SUBPROCESSES command.

The ATTACH _TWA42: command returns control to NOT-CONFIG. The ATTACH PROC_1 command returns control to MM. When MM is exited, control returns to the first subprocess. Then LOGOUT returns control to NOT-CONFIG.

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>SPAWN
$ MM
MM>SPAWN SHOW PROCESS /SUBPROCESSES
. . .
There are 3 processes in this job:
 _TWA42:
     PROC_1
        PROC_2 (*)
MM>ATTACH _TWA42:
NOT-CONFIG>ATTACH PROC_1
MM>EXIT
$ LOGOUT
NOT-CONFIG>
```

DELETE NAME

Deletes a name-mapping entry.

FORMAT

DELETE NAME *entry*

PARAMETERS

entry

Specifies the name-mapping entry to delete.

EXAMPLE

In this example, a name-mapping entry is created then deleted.

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>ADD NAME JOY FNORD.FLOWERS.COM
[Added mapping "JOY" = "FNORD.FLOWERS.COM"]
NOT-CONFIG>DELETE NAME JOY
NOT-CONFIG>
```

DELETE OBJECT

Deletes an object entry or its options. Use ADD OBJECT to change the object number. Use SHOW OBJECT/FULL to confirm deletions.

FORMAT

DELETE OBJECT *[entry] [FILE] [USER] [PASSWORD]*

PARAMETERS

entry

Specifies the object name to delete the object and all its options.

FILE

Specifies the FILE keyword to delete the file.

USER

Specifies the USER keyword to delete the user name.

PASSWORD

Specifies the PASSWORD keyword to delete the user password.

EXAMPLE

In this example, an object is added then displayed. The associated file name and object are removed. The object can be removed directly if desired. These steps only illustrate the possibilities, not an actual procedure sequence.

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>ADD OBJECT FISH NUMBER 0 FILE SYS$LOGIN:OH.COM
NOT-CONFIG>SHOW OBJECT FISH
Object Name    Number    Filename
-----------    ------    --------
FISH            0        SYS$LOGIN:OH.COM
NOT-CONFIG>DELETE OBJECT FISH FILE
[Changed object "FISH" number 0]
NOT-CONFIG>SHOW OBJECT FISH

Object Name    Number    Filename
-----------    ------    --------
FISH            0
NOT-CONFIG>DELETE OBJECT FISH
NOT-CONFIG>
```

DELETE PROXY

Deletes a proxy entry.

FORMAT

DELETE PROXY *entry*

PARAMETERS

entry

Specifies the entry to delete from the proxy database.

EXAMPLE

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>ADD PROXY FLOWERS::NOTHER JOY
[Added proxy "FLOWERS::NOTHER" = "JOY"]
NOT-CONFIG>ADD PROXY FLOWERS::NOTHER ME
[Added proxy "FLOWERS::NOTHER" = "ME"]
NOT-CONFIG>SHOW PROXY FLOWERS
Remote User            Local Users
--------------------   ------------
FLOWERS::NOTHER        JOY ME
NOT-CONFIG>DELETE PROXY FLOWERS ME
NOT-CONFIG>SHOW PROXY FLOWERS
Remote User            Local Users
--------------------   ------------
FLOWERS::NOTHER        JOY
```

EXIT

Saves the current configuration (if it has been modified), and quits the configuration utility.

FORMAT

EXIT

EXAMPLE

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>EXIT
[Configuration not modified, so no update needed]
$
```

When the configuration has not been changed, a message appears to indicate the configuration file is not updated.

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>ADD PROXY MYNODE::NEWUSER NEWUSER
NOT-CONFIG>EXIT
[Writing configuration to MULTINET:NOT.CONFIGURATION]
$
```

When the configuration changes, a message appears to indicate that the configuration file has been updated.

GET

Reads in a DECnet application services configuration file. (GET is the same as USE.) After using the GET command, you can use other NOT-CONFIG commands to display and modify the new configuration.

FORMAT

GET *config_file*

PARAMETERS

config_file

Specifies the name of the configuration file to read in.

EXAMPLE

This example reads in the MULTINET:NEW_CONFIG.CFG file.

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>GET MULTINET:NEW_CONFIG.CFG
[Reading in configuration from MULTINET:NEW_CONFIG.CFG;1]
NOT-CONFIG>EXIT
```

HELP

Displays help information.

FORMAT

HELP *[topics]*

PARAMETERS

topics

Specifies a space-delimited list of topics that begins with a topic, followed by subtopics. The default topic is HELP.

EXAMPLE

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>HELP
HELP
               Invokes command help.
               Format
               HELP   [topics]
Additional information available:
ADD      ATTACH       Command_Summary     DELETE     EXIT     GET
HELP     NETCONTROL   PUSH       QUIT     RELOAD     SAVE     SET
SHOW     SPAWN        STATUS     USE      VERSION    WRITE
Topic?  RETURN
NOT-CONFIG>
```

NETCONTROL

Changes the functionality of the executing *DECnet application services* image.

FORMAT

NETCONTROL *[hostname]*

PARAMETERS

hostname

Specifies the name of a host. If you do not specify the host name, it defaults to the local host.

DESCRIPTION

After invoking NETCONTROL, you can issue commands to the NETCONTROL server to affect MULTINET_SERVER operations on that host.

Restrictions

The NETCONTROL server is normally protected from unauthorized access by a restriction list.

EXAMPLE

This example reloads the NOT server.

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>>NETCONTROL
Connected to NETCONTROL server on "127.0.0.1"
< FLOWERS.COM Network Control Mon 13-Mar-2000 7:42am-EST
NOT>? NETCONTROL command, one of the following:
ATTACH   PUSH     QUIT     QUOTE    SELECT   SPAWN    VERBOSE
or Command, one of the following:
DEBUG    NOOP     RELOAD   VERSION
NOT>SELECT NOT
NOT>RELOAD
< NOT database reload done
NOT>QUIT
NOT-CONFIG>
```

PUSH

Starts a DCL subprocess. Attaches to a parent DCL command interpreter if it exists. To return from DCL, use the ATTACH command. If the MULTINET_DISABLE_SPAWN logical is set, PUSH does not work.

FORMAT

PUSH

EXAMPLE

In this example, PUSH is used to go to the DCL command line to disable broadcasts. The LOGOUT command returns control to NOT-CONFIG.

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>PUSH
$ SET TERM /NOBROADCAST
$ LOGOUT
NOT-CONFIG>
```

QUIT

Quits the configuration utility. If the configuration file has been changed, QUIT asks if you want to save the file.

FORMAT

QUIT

EXAMPLE

This example shows how to quit the NOT-CONFIG utility without saving any changes.

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>QUIT
Configuration modified, do you want to save it ? [NO] NO
$
```

RELOAD

Reloads DECnet application services from the default configuration file.

FORMAT

RELOAD

EXAMPLE

This example shows how to reload the default configuration file.

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>RELOAD
Connected to NETCONTROL server on "127.0.0.1"
< FNORD.IRIS.COM Network Control Mon 13-Mar-2000 7:42am-EST
< NOT database reload done
NOT-CONFIG>
```

SAVE

Writes out the current *DECnet application services* configuration file. (SAVE is the same as WRITE.)

FORMAT

SAVE *[config_file]*

PARAMETERS

config_file

Specifies the name of DECnet application services configuration file to write out. The default is the file from which the configuration was read.

EXAMPLE

This example shows how to save your changes to the configuration file.

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>SAVE
[Writing NOT configuration to
MULTINET_COMMON_ROOT:[MULTINET]NOT.CONFIGURATION;nn]
NOT-CONFIG>
```

SET

Sets NOT-CONFIG global parameters.

FORMAT

SET
{ DECNET-LOADED}
{ DOMAIN-DEFAULT}
{ HOST-NAME}
{ PASSWORD-DEFAULT}
{ PREFER-DECNET-TO-TCP}
{ USERNAME-DEFAULT}

PARAMETERS

DECNET-LOADED

If set to TRUE (the default), specifies that *DECnet application services* are being run with DECnet. If set to FALSE, only DECnet application services are used.

DOMAIN-DEFAULT

Specifies an alternate domain name. If you specify a DECnet node name with a dot, the domain host name is used, as is, as a TCP/IP node name. The default domain name is only appended if the TCP node name does not contain a dot. The maximum length for a domain name is 256 characters.

HOST-NAME

Specifies a name to override the SYS$NODE definition to set a six-character host name. This parameter is useful if there is a name conflict with the six-character DECnet node name.

PASSWORD-DEFAULT

Specifies a default password to use with the object database.

PREFER-DECNET-TO-TCP

If set to TRUE, specifies that DECnet is preferred to TCP/IP for making the connection.

USERNAME-DEFAULT

Specifies a default user name to use with the object database.

EXAMPLE

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>SET DOMAIN-DEFAULT FLOWERS.COM
```

SHOW

Displays the current DECnet application services configuration.

FORMAT

SHOW
{NAME-MAPPING [entry]}
{OBJECTS [/FULL] [entry]}
{PROXY [entry]}
{GLOBAL-PARAMETERS}
{[entry]}

PARAMETERS

NAME-MAPPING [entry]

Displays the complete NAME-MAPPING database or a single entry if you specify entry.

OBJECTS [/FULL] [entry]

Displays the complete OBJECT database or a single entry if you specify entry. If you specify /FULL, user name and password information is also displayed.

PROXY [entry]

Displays the complete PROXY database or a single entry if you specify entry.

GLOBAL-PARAMETERS

Displays the current settings of the global parameters.

[entry]

Displays information only about the specified entry.

EXAMPLE

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>SHOW OBJECT /FULL

Object Name Number Username     Password    FullNames Proxy    Filename
----------- ------ --------     --------    --------- -----    --------
DTR          63                              NO        INCOMING DTR
FAL          17                              YES       INCOMING FAL.EXE
MAIL         27                              YES       INCOMING MAIL_SER
VER.EXE
NML          19                              NO        INCOMING NML.EXE
NOTES        33    NOTES$SERVER FNORDIES     NO        NONE     NOTES$SER
VER.EXE
PHONE        29                              NO        INCOMING PHONE.EXE
```

```
VPM          51    MAIL$SERVER  FNORDIES    NO        NONE     VPM.EXE
. . .
NOT-CONFIG>SHOW NAME
DECnet nodename   TCP nodename
---------------   ------------
holmes            _
yobro             _
. . .
NOT-CONFIG>SHOW PROXY
Remote User            Local Users
--------------------   ------------
*.FOO.COM::*           *
FLOWERS::FNORDIST        FNORDIST
```

SPAWN

Executes a single DCL command, or if entered without options, starts a subprocess with the same effect as PUSH. To return from DCL, use the LOGOUT command. If the MULTINET_DISABLE_SPAWN logical is set, SPAWN does not work.

FORMAT

SPAWN *[command]*

PARAMETERS

command

Specifies a command to execute. If you omit the command, a DCL subprocess is created.

QUALIFIERS

/INPUT=*file-spec*

Specifies an input file to the command you enter with SPAWN.

/[NO]LOGICAL_NAMES

Specifies whether logical names and logical name tables are copied to the subprocess.

/[NO]SYMBOLS

Specifies whether global and local names are passed to the subprocess.

/[NO]WAIT

Specifies whether control returns without waiting for the command to complete. *Do not* use this qualifier with commands that have prompts or screen displays.

/OUTPUT=*file-spec*

Specifies a file that retains the output of the command invoked with SPAWN. This qualifier only works when a single command is entered without creating a DCL subprocess. In addition, this qualifier is positional; you must specify it immediately after SPAWN or its other qualifiers.

EXAMPLE

This example displays terminal information, captures the output in a file, then displays the information with the TYPE command.

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>SPAWN/OUTPUT=FOO. SHOW TERM
NOT-CONFIG>SPAWN TYPE FOO.
```

This example invokes a command procedure.

```
NOT-CONFIG>SPAWN @COMPROC
```

This example displays help information about NOT-CONFIG. Use the LOGOUT command to return control to NOT-CONFIG.

```
NOT-CONFIG>SPAWN
$ HELP MULTINET CONFIGURE /NOT
. . .
$ LOGOUT
NOT-CONFIG>
```

STATUS

Displays the status of the DECnet application services configuration.

FORMAT

STATUS

EXAMPLE

The *n/pppp* numbers shown in this example indicate how many entries are currently configured (*n*) and the number of potential numbers that can be configured (*pppp*).

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>STATUS
This is the MultiNet NOT configuration program Version 1.3(nn)
There are 7/5000 entries in the name mapping list.
There are 1/5000 entries in the proxy list.
There are 7/5000 entries in the object list.
The configuration MULTINET:NOT.CONFIGURATION has not been modified.
NOT-CONFIG>
```

USE

Reads in a configuration file. (USE is the same as GET.)

FORMAT

USE *config_file*

PARAMETERS

config_file

Specifies the name of the configuration file to read in.

DESCRIPTION

After using the USE command, you can use other NOT-CONFIG commands to display and modify the new configuration.

EXAMPLE

This example reads in the MULTINET:NEW_CONFIG.CFG file.

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>USE MULTINET:NEW_CONFIG.CFG
[Reading in configuration from MULTINET:NEW_CONFIG.CFG;1]
NOT-CONFIG>EXIT
```

VERSION

Displays the version and release information of the NOT-CONFIG configuration program.

FORMAT

VERSION

EXAMPLE

This is the MultiNet NOT configuration program Version 4.3 (nn)

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>VERSION
```

WRITE

Writes out the current *DECnet application services* configuration to a file. (WRITE is the same as SAVE.)

FORMAT

WRITE *[config_file]*

PARAMETERS

config_file

Specifies the name of *DECnet application services* configuration file to write out. The default is the file from which the configuration was read.

EXAMPLE

```
$ MULTINET CONFIGURE /NOT
MultiNet NOT Configuration Utility 4.3(nn)
[Reading in NOT configuration from MULTINET:NOT.CONFIGURATION]
NOT-CONFIG>WRITE
[Writing NOT configuration to
MULTINET_COMMON_ROOT:[MULTINET]NOT.CONFIGURATION;nn]
NOT-CONFIG>
```

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Reader's Comments
MultiNet for OpenVMS TCP/IP Services for DECnet Applications Guide, V. 4.3,
Part Number: N-5013-43-NN-A

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